

### **AMENDMENTS TO THE CLAIMS**

Please amend the claims as indicated below. The language being added is underlined ("\_\_\_") and the language being deleted contains either a strikethrough ("—") or is enclosed by double brackets ("[[ ]]").

1. (Currently Amended) An asynchronous digital subscriber line (ADSL) system comprising:

a central office (CO) operator configured to perform spectrum management by controlling use of overlapped modes of operation, wherein the CO operator is further configured to provide a power spectral density (PSD) mask for spectral shaping of an ADSL overlap spectrum transmission over a plain old telephone system (POTS) mode of operation, wherein for CO deployment, the CO operator ~~implements~~ shapes the spectrum transmission based on the following PSD mask: -97.5  $\pm$ 10% decibel-milliwatts per hertz (dBm/Hz) at 0  $\pm$ 10% kilohertz (kHz); -97.5  $\pm$ 10% dBm/Hz at 4  $\pm$ 10% kHz; -92.5  $\pm$ 10% dBm/Hz at 4  $\pm$ 10% kHz; -36.5  $\pm$ 10% dBm/Hz at 25  $\pm$ 10% kHz; -36.5  $\pm$ 10% dBm/Hz at 1104  $\pm$ 10% kHz; -46.5  $\pm$ 10% dBm/Hz at 2208  $\pm$ 10% kHz; -101.5  $\pm$ 10% dBm/Hz at 39.25  $\pm$ 10% kHz; -101.5  $\pm$ 10% dBm/Hz at 8500  $\pm$ 10% kHz; -103.5  $\pm$ 10% dBm/Hz at 8500  $\pm$ 10% kHz; and -103.5  $\pm$ 10% dBm/Hz at 11040  $\pm$ 10% kHz.

2. (Currently Amended) An asynchronous digital subscriber line (ADSL) system comprising:

a central office (CO) operator configured to perform spectrum management by controlling use of overlapped modes of operation, wherein the CO operator is further configured to provide a power spectral density (PSD) mask for spectral shaping of an

ADSL non-overlap spectrum transmission over a plain old telephone system (POTS) mode of operation, wherein for CO deployment, the CO operator ~~implements~~ shapes the spectrum transmission based on the following PSD mask:  $-97.5 \pm 10\%$

decibel-milliwatts per hertz (dBm/Hz) at  $0 \pm 10\%$  kilohertz (kHz);  $-97.5 \pm 10\%$  dBm/Hz at  $4 \pm 10\%$  kHz;  $-72.5 \pm 10\%$  dBm/Hz at  $80 \pm 10\%$  kHz;  $-36.5 \pm 10\%$  dBm/Hz at  $138 \pm 10\%$  kHz;  $-36.5 \pm 10\%$  dBm/Hz at  $1104 \pm 10\%$  kHz;  $-46.5 \pm 10\%$  dBm/Hz at  $2208 \pm 10\%$  kHz;  $-101.5 \pm 10\%$  dBm/Hz at  $39.25 \pm 10\%$  kHz;  $-101.5 \pm 10\%$  dBm/Hz at  $8500 \pm 10\%$  kHz;  $-103.5 \pm 10\%$  dBm/Hz at  $8500 \pm 10\%$  kHz; and  $-103.5 \pm 10\%$  dBm/Hz at  $11040 \pm 10\%$  kHz.

3. (Currently Amended) An asynchronous digital subscriber line (ADSL) system comprising:

a central office (CO) operator configured to perform spectrum management by controlling use of overlapped modes of operation,

wherein the CO operator is further configured to provide a power spectral density (PSD) mask for spectral shaping of an ADSL overlap spectrum transmission over a plain old telephone system (POTS) mode of operation, wherein for deployment at a remote terminal, the CO operator ~~implements~~ shapes the spectrum transmission based on the following PSD mask:  $-97.5 \pm 10\%$  decibel-milliwatts per hertz (dBm/Hz) at  $0 \pm 10\%$  kilohertz (kHz);  $-97.5 \pm 10\%$  dBm/Hz at  $4 \pm 10\%$  kHz;  $-92.5 \pm 10\%$  dBm/Hz at  $4 \pm 10\%$  kHz;  $-56.5 \pm 10\%$  dBm/Hz at  $25 \pm 10\%$  kHz;  $-56.5 \pm 10\%$  dBm/Hz at  $1104 \pm 10\%$  kHz;  $-46.5 \pm 10\%$  dBm/Hz at  $2208 \pm 10\%$  kHz;  $-101.5 \pm 10\%$  dBm/Hz at  $39.25 \pm 10\%$  kHz;  $-101.5 \pm 10\%$  dBm/Hz at  $8500 \pm 10\%$  kHz;  $-103.5 \pm 10\%$  dBm/Hz at  $8500 \pm 10\%$  kHz; and

-103.5  $\pm$ 10% dBm/Hz at 11040  $\pm$ 10% kHz.

4. (Currently Amended) An asynchronous digital subscriber line (ADSL) system comprising:

a central office (CO) operator configured to perform spectrum management by controlling use of overlapped modes of operation, wherein the CO operator is further configured to provide a power spectral density (PSD) mask for spectral shaping of an ADSL non-overlap spectrum transmission over a plain old telephone system (POTS), wherein for deployment at a remote terminal, the CO operator ~~implements~~ shapes the spectrum transmission based on the following PSD mask: -97.5  $\pm$ 10% decibel-milliwatts per hertz (dBm/Hz) at 0  $\pm$ 10% kilohertz (kHz); -97.5  $\pm$ 10% dBm/Hz at 4  $\pm$ 10% kHz; -72.5  $\pm$ 10% dBm/Hz at 80 kHz; -56.5  $\pm$ 10% dBm/Hz at 138  $\pm$ 10% kHz; -56.5  $\pm$ 10% dBm/Hz at 1104  $\pm$ 10% kHz; -46.5  $\pm$ 10% dBm/Hz at 2208  $\pm$ 10% kHz; -101.5  $\pm$ 10% dBm/Hz at 39.25  $\pm$ 10% kHz; -101.5  $\pm$ 10% dBm/Hz at 8500  $\pm$ 10% kHz; -103.5  $\pm$ 10% dBm/Hz at 8500  $\pm$ 10% kHz; and -103.5  $\pm$ 10% dBm/Hz at 11040  $\pm$ 10% kHz.

5. (Currently Amended) An asynchronous digital subscriber line (ADSL) system comprising:

a central office (CO) operator configured to perform spectrum management by controlling use of overlapped modes of operation, wherein the CO operator is further configured to provide a power spectral density (PSD) mask for spectral shaping of an ADSL overlap spectrum over an integrated digital services network (ISDN) mode of operation, wherein for CO deployment, the CO operator ~~implements~~ shapes the

spectrum transmission based on the following PSD mask:  $-90 \pm 10\%$  decibel-milliwatts per hertz (dBm/Hz) at  $0 \pm 10\%$  kilohertz (kHz);  $-90 \pm 10\%$  dBm/Hz at  $93.1 \pm 10\%$  kHz;  $-62 \pm 10\%$  dBm/Hz at  $209 \pm 10\%$  kHz;  $-36.5 \pm 10\%$  dBm/Hz at  $255 \pm 10\%$  kHz;  $-36.5 \pm 10\%$  dBm/Hz at  $1104 \pm 10\%$  kHz;  $-46.5 \pm 10\%$  dBm/Hz at  $2208 \pm 10\%$  kHz;  $-101.5 \pm 10\%$  dBm/Hz at  $39.25 \pm 10\%$  kHz;  $-101.5 \pm 10\%$  dBm/Hz at  $8500 \pm 10\%$  kHz;  $-103.5 \pm 10\%$  dBm/Hz at  $8500 \pm 10\%$  kHz; and  $-103.5 \pm 10\%$  dBm/Hz at  $11040 \pm 10\%$  kHz.

6. (Currently Amended) An asynchronous digital subscriber line (ADSL) system comprising:

a central office (CO) operator configured to perform spectrum management by controlling use of overlapped modes of operation, wherein the CO operator is further configured to provide a power spectral density (PSD) mask for spectral shaping of an ADSL non-overlap spectrum over an integrated digital services network (ISDN) mode of operation, wherein for deployment at a remote terminal, the CO operator ~~implements~~ shapes the spectrum transmission based on the following PSD mask:  $-90 \pm 10\%$  decibel-milliwatts per hertz (dBm/Hz) at  $0 \pm 10\%$  kilohertz (kHz);  $-90 \pm 10\%$  dBm/Hz at  $93.1 \pm 10\%$  kHz;  $-62 \pm 10\%$  dBm/Hz at  $209 \pm 10\%$  kHz;  $-56.5 \pm 10\%$  dBm/Hz at  $255 \pm 10\%$  kHz;  $-56.5 \pm 10\%$  dBm/Hz at  $1104 \pm 10\%$  kHz;  $-46.5 \pm 10\%$  dBm/Hz at  $2208 \pm 10\%$  kHz;  $-101.5 \pm 10\%$  dBm/Hz at  $39.25 \pm 10\%$  kHz;  $-101.5 \pm 10\%$  dBm/Hz at  $8500 \pm 10\%$  kHz;  $-103.5 \pm 10\%$  dBm/Hz at  $8500 \pm 10\%$  kHz; and  $-103.5 \pm 10\%$  dBm/Hz at  $11040 \pm 10\%$  kHz.

7. (Currently Amended) An asynchronous digital subscriber line (ADSL) system comprising:

a central office (CO) operator configured to perform spectrum management and implement separate power spectral density (PSD) masks for CO deployments and remote terminal deployments, wherein the CO operator is further configured to provide a power spectral density (PSD) mask for spectral shaping of an ADSL overlap spectrum transmission over a plain old telephone system (POTS), wherein for CO deployments, the CO operator ~~implements~~ shapes the spectrum transmission based on the following PSD mask:  $-97.5 \pm 5\%$  decibel-milliwatts per hertz (dBm/Hz) at  $0 \pm 5\%$  kilohertz (kHz);  $-97.5 \pm 5\%$  dBm/Hz at  $4 \pm 5\%$  kHz;  $-92.5 \pm 5\%$  dBm/Hz at  $4 \pm 5\%$  kHz;  $-36.5 \pm 5\%$  dBm/Hz at  $25 \pm 5\%$  kHz;  $-36.5 \pm 5\%$  dBm/Hz at  $1104 \pm 5\%$  kHz;  $-46.5 \pm 5\%$  dBm/Hz at  $2208 \pm 5\%$  kHz;  $-101.5 \pm 5\%$  dBm/Hz at  $39.25 \pm 5\%$  kHz;  $-101.5 \pm 5\%$  dBm/Hz at  $8500 \pm 5\%$  kHz;  $-103.5 \pm 5\%$  dBm/Hz at  $8500 \pm 5\%$  kHz; and  $-103.5 \pm 5\%$  dBm/Hz at  $11040 \pm 5\%$  kHz.

8. (Currently Amended) An asynchronous digital subscriber line (ADSL) system comprising:

a central office (CO) operator configured to perform spectrum management and implement separate power spectral density (PSD) masks for CO deployments and remote terminal deployments, wherein the CO operator is further configured to provide a power spectral density (PSD) mask for spectral shaping of an ADSL non-overlap spectrum transmission over a plain old telephone system (POTS), wherein for CO deployments, the CO operator ~~implements~~ shapes the spectrum transmission based

on the following PSD mask:  $-97.5 \pm 5\%$  decibel-milliwatts per hertz (dBm/Hz) at  $0 \pm 5\%$  kilohertz (kHz);  $-97.5 \pm 5\%$  dBm/Hz at  $4 \pm 5\%$  kHz;  $-72.5 \pm 5\%$  dBm/Hz at  $80 \pm 5\%$  kHz;  $-36.5 \pm 5\%$  dBm/Hz at  $138 \pm 5\%$  kHz;  $-36.5 \pm 5\%$  dBm/Hz at  $1104 \pm 5\%$  kHz;  $-46.5 \pm 5\%$  dBm/Hz at  $2208 \pm 5\%$  kHz;  $-101.5 \pm 5\%$  dBm/Hz at  $39.25 \pm 5\%$  kHz;  $-101.5 \pm 5\%$  dBm/Hz at  $8500 \pm 5\%$  kHz;  $-103.5 \pm 5\%$  dBm/Hz at  $8500 \pm 5\%$  kHz; and  $-103.5 \pm 5\%$  dBm/Hz at  $11040 \pm 5\%$  kHz.

9. (Currently Amended) An asynchronous digital subscriber line (ADSL) system comprising:

a central office (CO) operator configured to perform spectrum management and implement separate power spectral density (PSD) masks for CO deployments and remote terminal deployments, wherein the CO operator is further configured to provide a power spectral density (PSD) mask for spectral shaping of an ADSL overlap spectrum transmission over a plain old telephone system (POTS), wherein for remote terminal deployments, the CO operator ~~implements~~ shapes the spectrum transmission based on the following PSD mask:  $-97.5 \pm 5\%$  decibel-milliwatts per hertz (dBm/Hz) at  $0 \pm 5\%$  kilohertz (kHz);  $-97.5 \pm 5\%$  dBm/Hz at  $4 \pm 5\%$  kHz;  $-92.5 \pm 5\%$  dBm/Hz at  $4 \pm 5\%$  kHz;  $-56.5 \pm 5\%$  dBm/Hz at  $25 \pm 5\%$  kHz;  $-56.5 \pm 5\%$  dBm/Hz at  $1104 \pm 5\%$  kHz;  $-46.5 \pm 5\%$  dBm/Hz at  $2208 \pm 5\%$  kHz;  $-101.5 \pm 5\%$  dBm/Hz at  $39.25 \pm 5\%$  kHz;  $-101.5 \pm 5\%$  dBm/Hz at  $8500 \pm 5\%$  kHz;  $-103.5 \pm 5\%$  dBm/Hz at  $8500 \pm 5\%$  kHz; and  $-103.5 \pm 5\%$  dBm/Hz at  $11040 \pm 5\%$  kHz.

10. (Currently Amended) An asynchronous digital subscriber line (ADSL) system comprising:

a central office (CO) operator configured to perform spectrum management and implement separate power spectral density (PSD) masks for CO deployments and remote terminal deployments, wherein the CO operator is further configured to provide a power spectral density (PSD) mask for spectral shaping of an ADSL non-overlap spectrum transmission over a plain old telephone system (POTS), wherein for remote terminal deployments, the CO operator ~~implements~~ shapes the spectrum transmission based on PSD mask:  $-97.5 \pm 5\%$  decibel–milliwatts per hertz (dBm/Hz) at  $0 \pm 5\%$  kilohertz (kHz);  $-97.5 \pm 5\%$  dBm/Hz at  $4 \pm 5\%$  kHz;  $-72.5 \pm 5\%$  dBm/Hz at  $80 \pm 5\%$  kHz;  $-56.5 \pm 5\%$  dBm/Hz at  $138 \pm 5\%$  kHz;  $-56.5 \pm 5\%$  dBm/Hz at  $1104 \pm 5\%$  kHz;  $-46.5 \pm 5\%$  dBm/Hz at  $2208 \pm 5\%$  kHz;  $-101.5 \pm 5\%$  dBm/Hz at  $39.25 \pm 5\%$  kHz;  $-101.5 \pm 5\%$  dBm/Hz at  $8500 \pm 5\%$  kHz;  $-103.5 \pm 5\%$  dBm/Hz at  $8500 \pm 5\%$  kHz; and  $-103.5 \pm 5\%$  dBm/Hz at  $11040 \pm 5\%$  kHz.

11. (Currently Amended) An asynchronous digital subscriber line (ADSL) system comprising:

a central office (CO) operator configured to perform spectrum management and implement separate power spectral density (PSD) masks for CO deployments and remote terminal deployments, wherein the CO operator is further configured to provide a power spectral density (PSD) mask for spectral shaping of an ADSL overlap spectrum over an integrated digital services network (ISDN) mode of operation, wherein for CO deployment, the CO operator ~~implements~~ shapes the spectrum

transmission based on the following PSD mask:  $-90 \pm 5\%$  decibel-milliwatts per hertz (dBm/Hz) at  $0 \pm 5\%$  kilohertz (kHz);  $-90 \pm 5\%$  dBm/Hz at  $93.1 \pm 5\%$ , kHz;  $-62 \pm 5\%$  dBm/Hz at  $209 \pm 5\%$  kHz;  $-36.5 \pm 5\%$  dBm/Hz at  $255 \pm 5\%$  kHz;  $-36.5 \pm 5\%$  dBm/Hz at  $1104 \pm 5\%$  kHz;  $-46.5 \pm 5\%$  dBm/Hz at  $2208 \pm 5\%$  kHz;  $-101.5 \pm 5\%$  dBm/Hz at  $39.25 \pm 5\%$  kHz;  $-101.5 \pm 5\%$  dBm/Hz at  $8500 \pm 5\%$  kHz;  $-103.5 \pm 5\%$  dBm/Hz at  $8500 \pm 5\%$  kHz; and  $-103.5 \pm 5\%$  dBm/Hz at  $11040 \pm 5\%$  kHz.

12. (Currently Amended) An asynchronous digital subscriber line (ADSL) system comprising:

a central office (CO) operator configured to perform spectrum management and implement separate power spectral density (PSD) masks for CO deployments and remote terminal deployments, wherein the CO operator is further configured to provide a power spectral density (PSD) mask for spectral shaping of an ADSL non-overlap spectrum over an integrated digital services network (ISDN) mode of operation, wherein for deployment at a remote terminal, the CO operator ~~implements~~ shapes the spectrum transmission based on the following PSD mask:  $-90 \pm 5\%$  decibel-milliwatts per hertz (dBm/Hz) at  $0 \pm 5\%$  kilohertz (kHz);  $-90 \pm 5\%$  dBm/Hz at  $93.1 \pm 5\%$  kHz;  $-62 \pm 5\%$  dBm/Hz at  $209 \pm 5\%$  kHz;  $-56.5 \pm 5\%$  dBm/Hz at  $255 \pm 5\%$  kHz;  $-56.5 \pm 5\%$  dBm/Hz at  $1104 \pm 5\%$  kHz;  $-46.5 \pm 5\%$  dBm/Hz at  $2208 \pm 5\%$  kHz;  $-101.5 \pm 5\%$  dBm/Hz at  $39.25 \pm 5\%$  kHz;  $-101.5 \pm 5\%$  dBm/Hz at  $8500 \pm 5\%$  kHz;  $-103.5 \pm 5\%$  dBm/Hz at  $8500 \pm 5\%$  kHz; and  $-103.5 \pm 5\%$  dBm/Hz at  $11040 \pm 5\%$  kHz.



13. (Previously Presented) An asynchronous digital subscriber line (ADSL) system comprising:
- a central office (CO) ADSL transceiver unit (ATU-C) for transmitting data to a remote ADSL transceiver unit (ATU-R);
  - a CO operator for performing spectral shaping of ADSL spectrum transmission between the ATU-C and the ATU-R over one of: a plain old telephone system (POTS) and an integrated digital services network (ISDN), wherein the CO operator further performs spectral shaping based on whether an overlapping or non-overlapping spectrum is deployed; and
  - a plurality of PSD masks utilized by the CO operator to perform spectral shaping, wherein the CO operator selects one of the plurality of PSD masks based on mode of operation comprising one of: CO deployment and remote terminal deployment.